



STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number: 139930

TO: Deborah Lambkin
Location:
Art Unit: 1626
December 9, 2004

Case Serial Number: 99/999999

From: P. Sheppard
Location: Remsen Building
Phone: (571) 272-2529

sheppard@uspto.gov

Search Notes

Access DB# 139988

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Deborah Lamban Examiner #: 71700 Date: 12/9/04
Art Unit: 1626 Phone Number 30202-92-6142 Serial Number: _____
Mail Box and Bldg/Rm Location: _____ Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

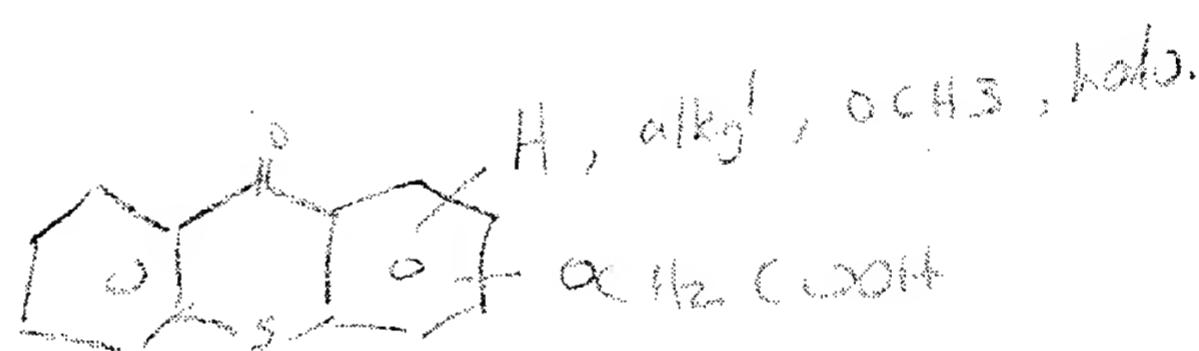
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Process for the Production of Substituted Thienyl
Inventors (please provide full names): Alan Trammell

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Patent can you please show me the compound number
As 14-18



or
O(H₂)₂ C10H14

↓
isopropyl or straight

Thanks Deb

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>D. Lopazan</u>	NA Sequence (#)	STN	_____
Searcher Phone #:	AA Sequence (#)	Dialog	_____
Searcher Location:	Structure (#)	Questel/Orbit	_____
Date Searcher Picked Up:	Bibliographic	Dr. Link	_____
Date Completed: <u>12/9/04</u>	Litigation	Lexis/Nexis	_____
Searcher Prep & Review Time:	Fulltext	Sequence Systems	_____
Clerical Prep Time:	Patent Family	WWW/Internet	_____
Online Time:	Other	Other (specify)	_____

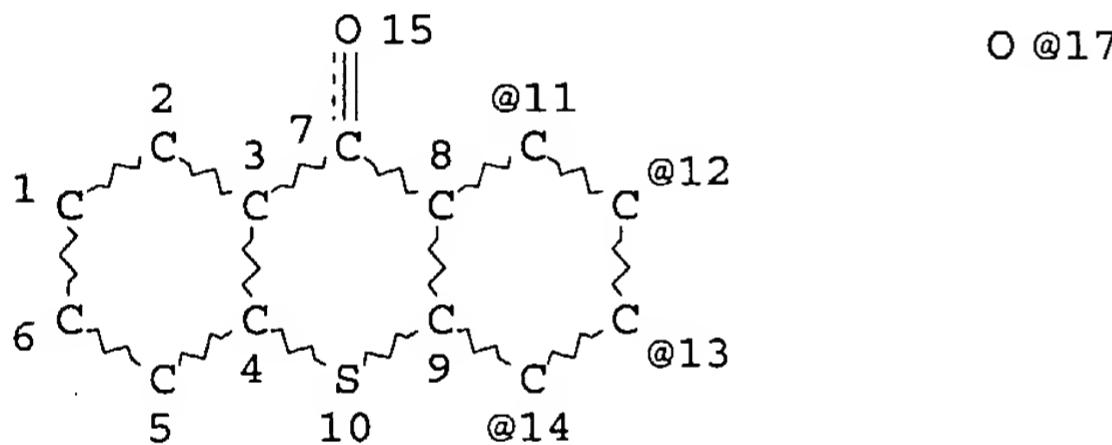
=> fil hcaplus
FILE 'HCAPLUS' ENTERED AT 16:44:05 ON 09 DEC 2004
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FILE COVERS 1907 - 9 Dec 2004 VOL 141 ISS 24
FILE LAST UPDATED: 8 Dec 2004 (20041208/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L3 STR

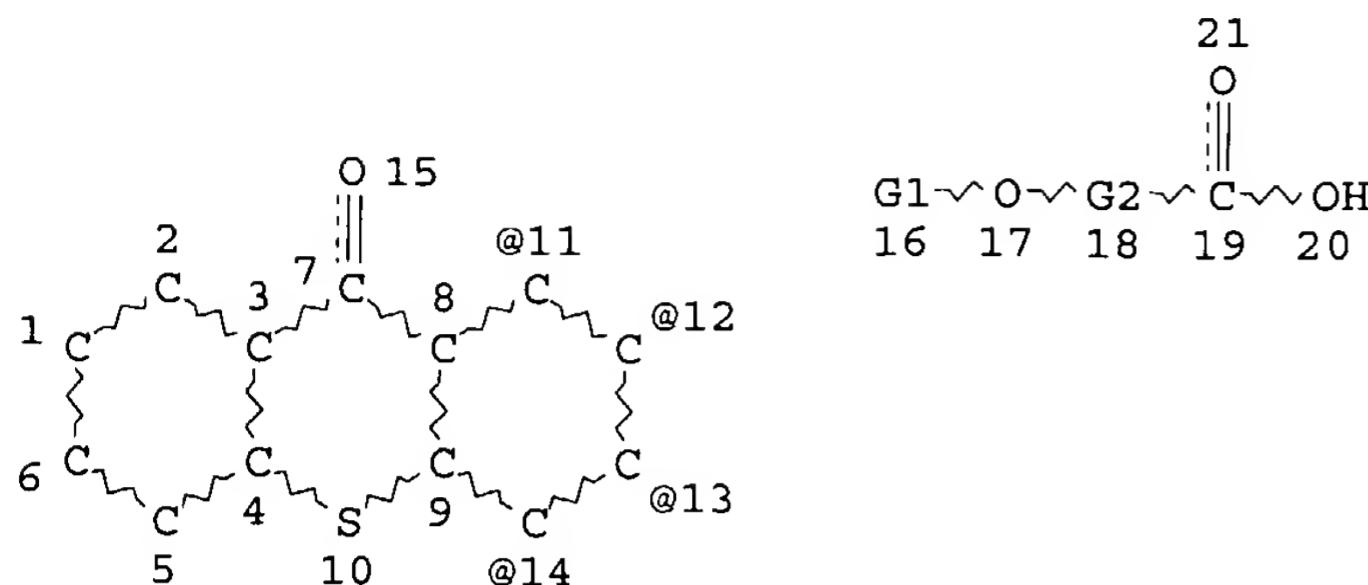


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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 16

STEREO ATTRIBUTES: NONE
L5 1047 SEA FILE=REGISTRY SSS FUL L3
L6 STR



VAR G1=11/12/13/14

REP G2=(1-3) C

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

L7 14 SEA FILE=REGISTRY SUB=L5 SSS FUL L6

L8 17 SEA FILE=HCAPLUS ABB=ON PLU=ON L7

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=> d ibib abs hitstr 18 1-17

L8 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2004:568383 HCAPLUS

DOCUMENT NUMBER: 141:114096

TITLE: Ink-jet printing process by employing photocurable inks, and formed printed matter

INVENTOR(S): Ishikawa, Wataru

PATENT ASSIGNEE(S): Konica Minolta Holdings, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 29 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004195664	A2	20040715	JP 2002-363427	20021216
PRIORITY APPLN. INFO.:			JP 2002-363427	20021216

AB In the printing process employing the inks containing water binder, photoradically polymerizable monomers, and photopolymn. initiators, total power consumption of light sources used is suppressed to <1 kW-h. Alternatively, the peak luminance at effective wavelength region of the light sources is suppressed to 0.1-80 mW/cm². The process suppresses generation of wrinkles and curls on the printed matter.

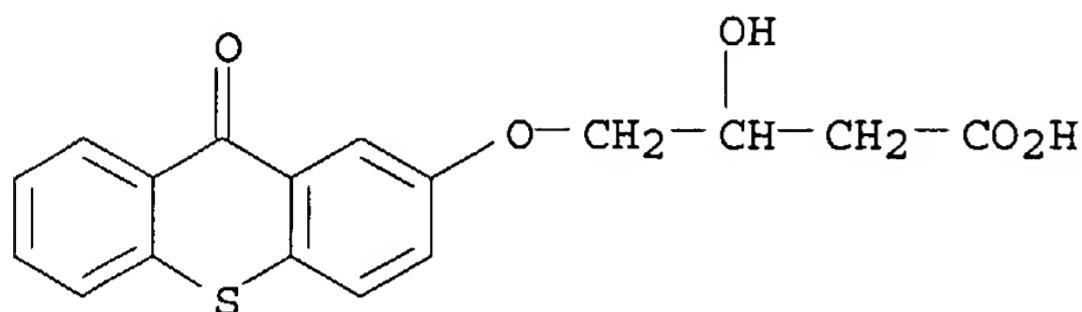
IT 721402-25-1

RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)

(photopolymn. initiator; ink-jet printing process employing photocurable inks with suppressing total power consumption of light sources)

RN 721402-25-1 HCPLUS

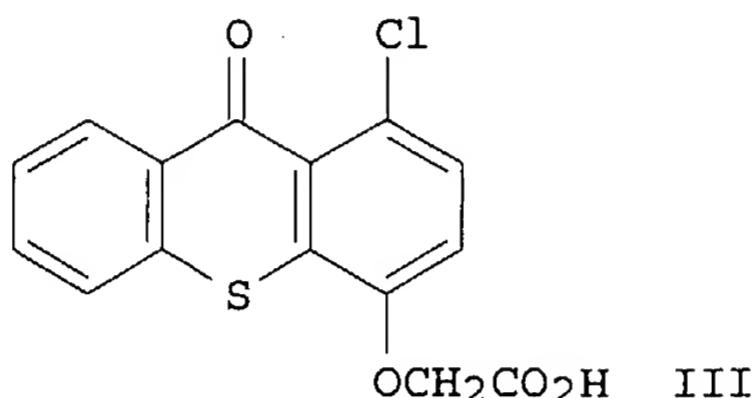
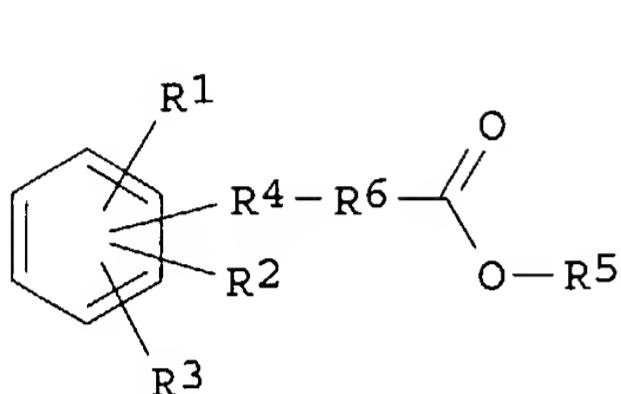
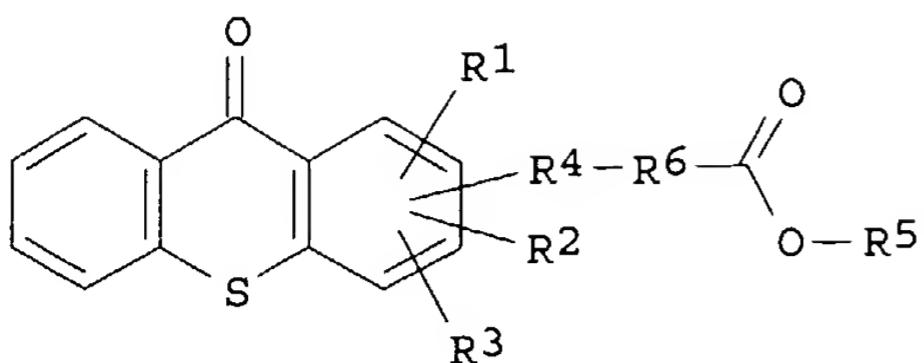
CN Butanoic acid, 3-hydroxy-4-[(9-oxo-9H-thioxanthan-2-yl)oxy]-, monosodium salt (9CI) (CA INDEX NAME)



● Na

L8 ANSWER 2 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2004:36704 HCPLUS
 DOCUMENT NUMBER: 140:93924
 TITLE: An improved process for the production of substituted thioxanthones
 INVENTOR(S): Timms, Allan W.; Green, William A.
 PATENT ASSIGNEE(S): Great Lakes (Uk) Limited, UK
 SOURCE: Eur. Pat. Appl., 17 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1380580	A1	20040114	EP 2003-254067	20030626
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2004059133	A1	20040325	US 2003-613303	20030703
PRIORITY APPLN. INFO.:			GB 2002-16311	A 20020713
OTHER SOURCE(S):	MARPAT	140:93924		
GI				



AB A one-step process for the preparation of a substituted thioxanthone I [R1-R3 = H, alkyl, alkoxy, halo, OH, dialkylamino; R4 = O, S, absent; R5 = H, alkyl, aryl; R6 = alkyl], such as carboxymethoxythioxanthone, in high yields and as a single isomer. The substituted aryl compound II is reacted with mercaptobenzoic acid or dithiobisbenzoic acid in the presence of sulfuric acid. Thus, reacting dithiobisbenzoic acid with 4-chlorophenoxyacetic acid in the presence of concentrate H₂SO₄ afforded 74% III.

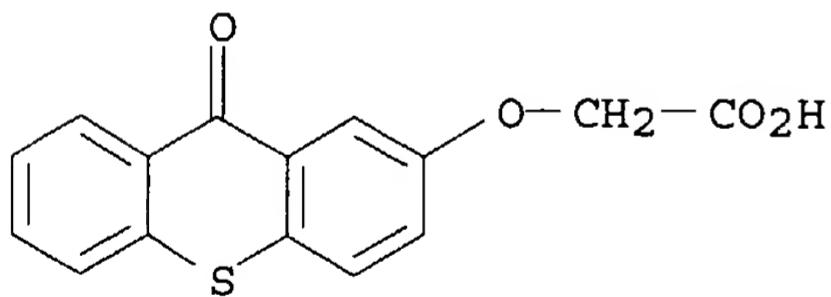
IT 84434-05-9P 644468-15-5P 644468-16-6P
644468-17-7P 644468-18-8P 644468-19-9P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(an improved process for the production of substituted thioxanthones)

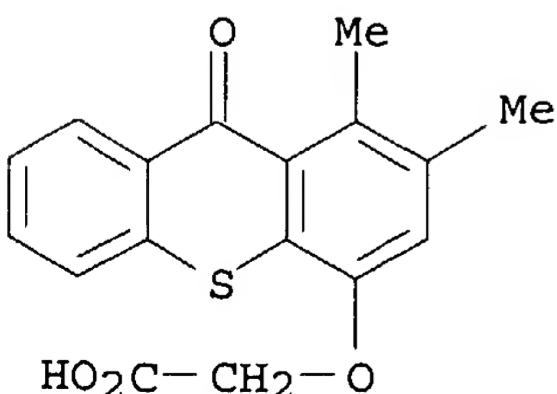
RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy]- (9CI) (CA INDEX NAME)

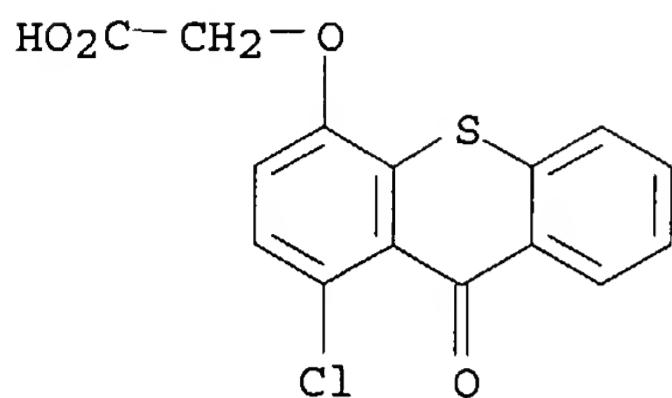


RN 644468-15-5 HCPLUS

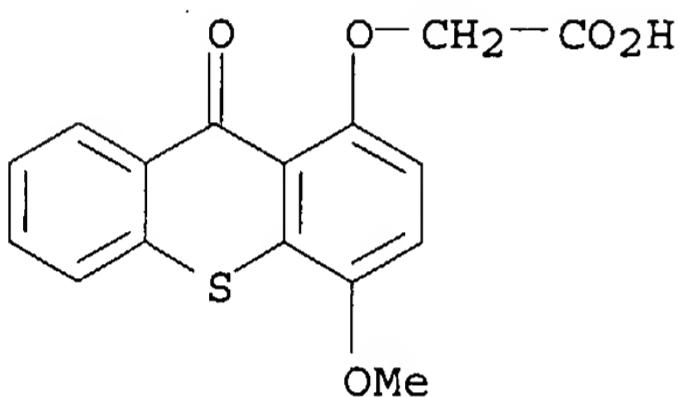
CN Acetic acid, [(1,2-dimethyl-9-oxo-9H-thioxanthen-4-yl)oxy]- (9CI) (CA INDEX NAME)



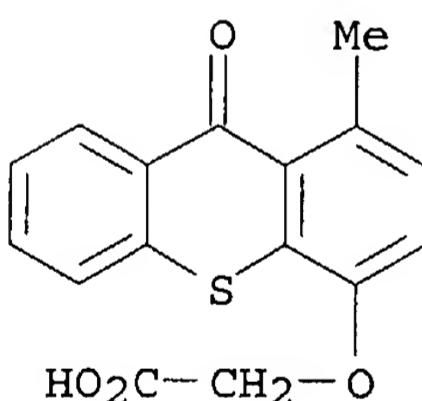
RN 644468-16-6 HCPLUS
CN Acetic acid, [(1-chloro-9-oxo-9H-thioxanthan-4-yl)oxy] - (9CI) (CA INDEX NAME)



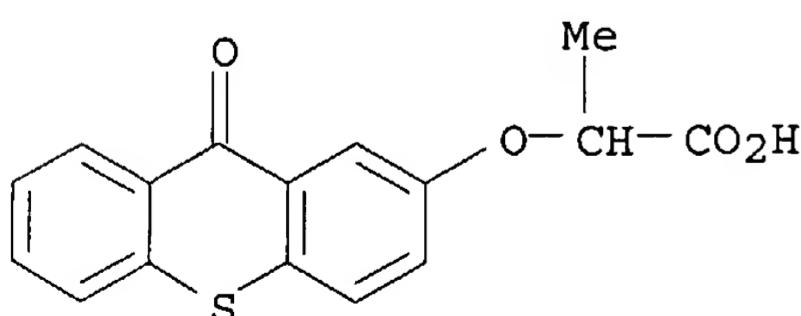
RN 644468-17-7 HCPLUS
CN Acetic acid, [(4-methoxy-9-oxo-9H-thioxanthen-1-yl)oxy] - (9CI) (CA INDEX NAME)



RN 644468-18-8 HCPLUS
CN Acetic acid, [(1-methyl-9-oxo-9H-thioxanthen-4-yl)oxy] - (9CI) (CA INDEX NAME)



RN 644468-19-9 HCPLUS
CN Propanoic acid, 2-[(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:718628 HCPLUS

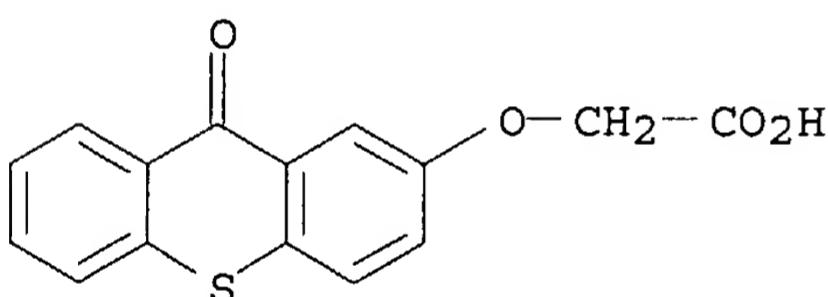
DOCUMENT NUMBER: 139:365280
 TITLE: One-component bimolecular photoinitiating systems, 2
 thioxanthone acetic acid derivatives as
 photoinitiators for free radical polymerization
 AUTHOR(S): Aydin, Meral; Arsu, Nergis; Yagci, Yusuf
 CORPORATE SOURCE: Department of Chemistry, Yildiz Technical University,
 Istanbul, 34210, Turk.
 SOURCE: Macromolecular Rapid Communications (2003), 24(12),
 718-723
 CODEN: MRCOE3; ISSN: 1022-1336
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The compds. 2-thioxanthonethioacetic acid and 2-(carboxymethoxy)thioxanthone, bimol. photoinitiators for free radical polymerization, are synthesized and characterized. Their capability to act as initiators for the polymerization of Me methacrylate is examined. The postulated mechanism is based on the intermol. electron-transfer reaction of the excited photoinitiator with the sulfur or oxygen atom of the ground state of the resp. photoinitiator followed by decarboxylation. The resulting alkyl radicals initiate the polymerization

IT 84434-05-9P, 2-(Carboxymethoxy)thioxanthone
 RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation);
 USES (Uses)
 (preparation of thioxanthone acetic acid derivs. as photoinitiators for radical polymerization)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



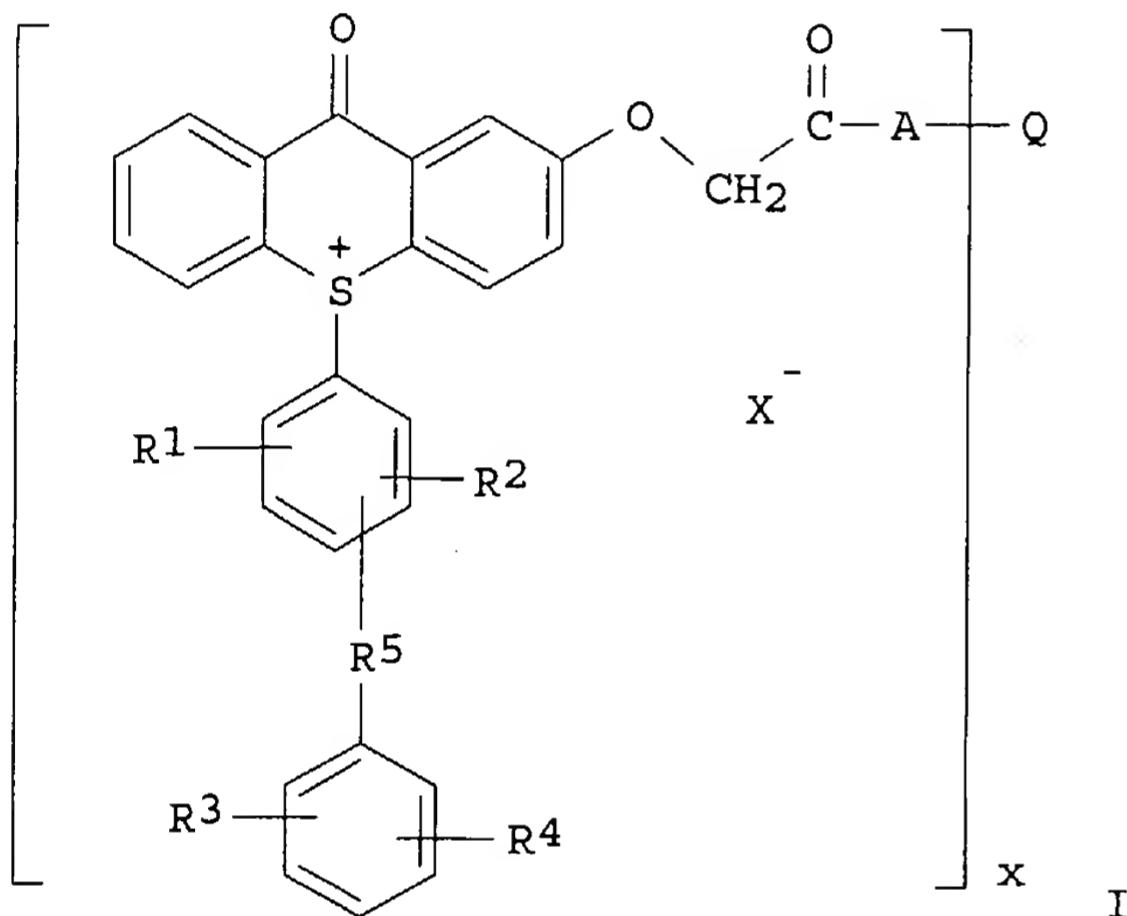
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 2003:696887 HCPLUS
 DOCUMENT NUMBER: 139:231973
 TITLE: Thioxanthone derivatives, and their use as cationic photoinitiators for varnish and ink compositions
 INVENTOR(S): Herlihy, Shaun Lawrence
 PATENT ASSIGNEE(S): Sun Chemical Corporation, USA
 SOURCE: PCT Int. Appl., 36 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072568	A1	20030904	WO 2003-US5820	20030226
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,				

PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
 UG, US, UZ, VN, YU, ZA, ZM, ZW
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
 EP 1480968 A1 20041201 EP 2003-743250 20030226
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
 PRIORITY APPLN. INFO.: GB 2002-4468 A 20020226
 WO 2003-US5820 W 20030226

OTHER SOURCE(S): MARPAT 139:231973
 GI

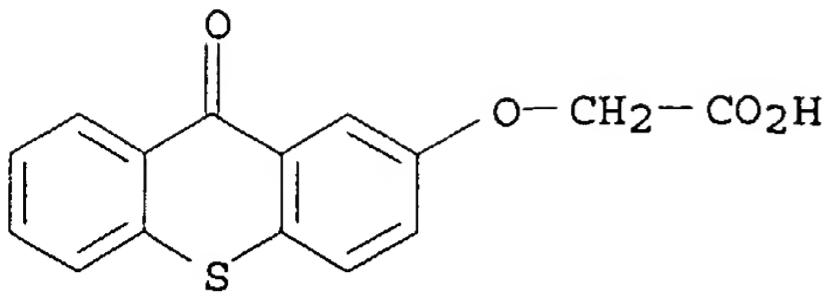


AB Photoinitiator compds. I [A = direct bond or $[O(CHR_7CHR_6)a]_y$, $[O(CH_2)bCO]_y$, or $(O(CH_2)bCO)(y-1)[O(CHR_7CHR_6)a]$, where 1 of R₆ and R₇ is H and the other is H or Me; a = 1-2; b = 4-5; Q = residue of a polyhydroxy compound having 2-6 hydroxy groups; x > 1 but no greater than the number of available hydroxyl groups in Q; y = 1-10; R₁₋₄ = H, hydroxy, or alkyl; or R₁ and R₃ are joined to form a fused ring system with the benzene rings to which they are attached; and R₅ = direct bond, O or CH₂] are useful as cationic photoinitiators, especially for use in surface coating applications, such as printing inks and varnishes.

IT 84434-05-9P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (reaction with polyTHF; thioxanthone derivative cationic photoinitiators for varnish and ink compns.)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthene-2-yl)oxy] - (9CI) (CA INDEX NAME)



REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:696886 HCAPLUS

DOCUMENT NUMBER: 139:231972

TITLE: Fused ring compounds, and their use as cationic photoinitiators for ink and varnish formulations

INVENTOR(S): Herlihy, Shaun Lawrence

PATENT ASSIGNEE(S): Sun Chemical Corporation, USA

SOURCE: PCT Int. Appl., 53 pp.

CODEN: PIXXD2

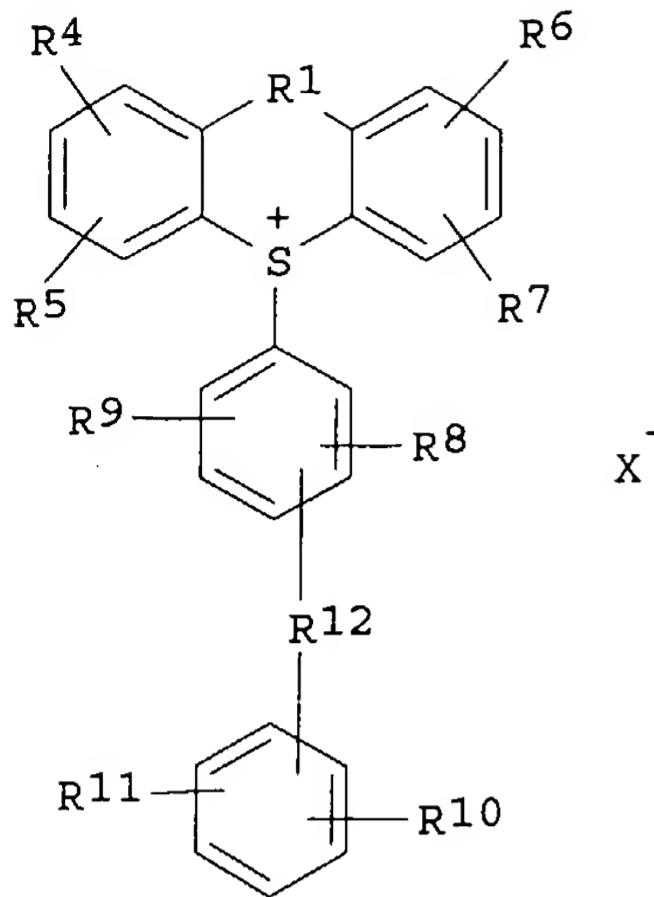
DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072567	A1	20030904	WO 2003-US6106	20030226
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1480967	A1	20041201	EP 2003-713768	20030226
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRIORITY APPLN. INFO.:			GB 2002-4467	A 20020226
			WO 2003-US6106	W 20030226
OTHER SOURCE(S):	MARPAT	139:231972		
GI				



AB Compds. I [R1 = O, CH₂, S, C:O, (CH₂)₂ or NR_a, where Ra = H or alkyl; R4-7 = H or various groups or atoms; R8-11 = H, hydroxy, or alkyl; or R9 and R11 form a fused ring system with the benzene rings to which they are attached; R12 = direct bond, O or CH₂; and X is an anion; and esters thereof] are useful as cationic photoinitiators, especially for use in surface coating applications, such as printing inks and varnishes.

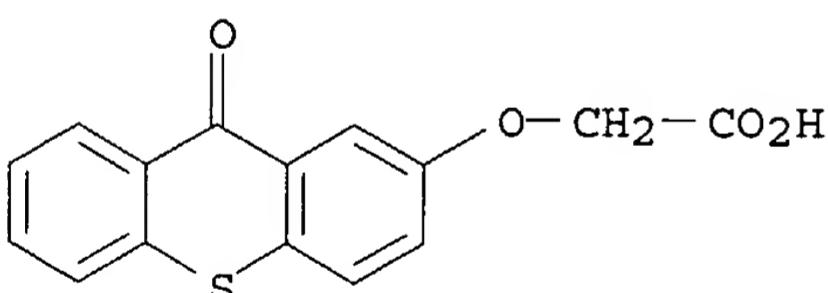
IT 84434-05-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(fused heterocyclic sulfur derivative for cationic photoinitiators for ink and varnish formulations)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:319895 HCPLUS

DOCUMENT NUMBER: 138:339760

TITLE: Multifunctional thioxanthone photoinitiators

INVENTOR(S): Herlihy, Shaun Lawrence

PATENT ASSIGNEE(S): Coates Brothers PLC, UK

SOURCE: PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

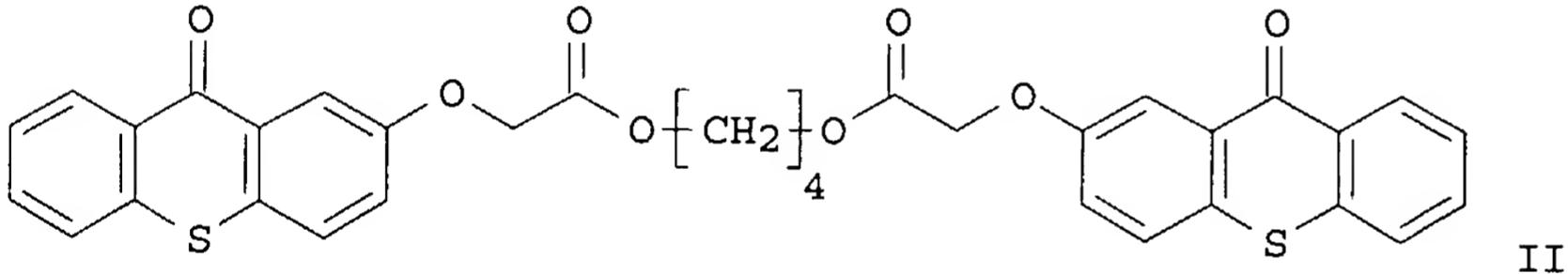
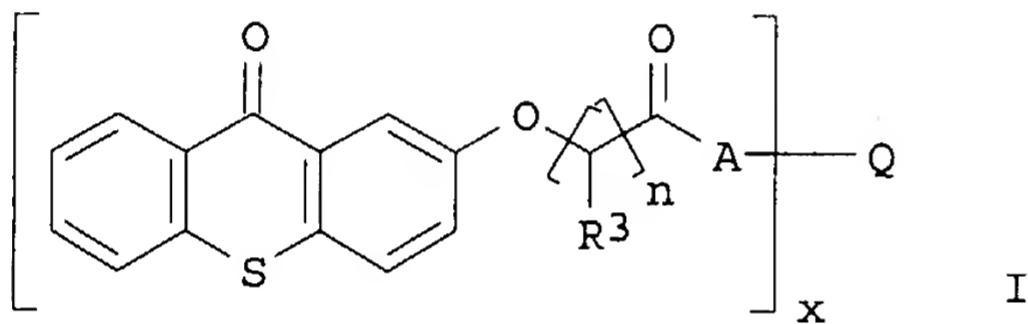
KIND DATE

APPLICATION NO.

DATE

WO 2003033492	A1 20030424	WO 2002-GB4324	20020924
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		
EP 1436288	A1 20040714	EP 2002-770063	20020924
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK			
PRIORITY APPLN. INFO.:		GB 2001-25098	A 20011018
		WO 2002-GB4324	W 20020924

OTHER SOURCE(S) : MARPAT 138:339760
GI



AB Compds. I [R3 = H, Et, Me; n = 1-6; A = [O(CH₂CHR₁)_a]_y, [O(CH₂)_bCO]_y, [O(CH₂)_bCO]_(y-1)[O(CH₂CHR₁)_a]; where one of R1 and R2 is H and the other is H, Me or Et; a = 1-2; b = 4-5; y = 1-10; Q = residue of a polyhydroxy compound having 2-6 OH groups; x is greater than 1 but no greater than the number of available OH groups in Q] and esters thereof are useful as photoinitiators for preparation of energy-curable compns., such as printing inks. Thus, II was prepared and showed good cure speed and low migration when used in a printing ink formulation.

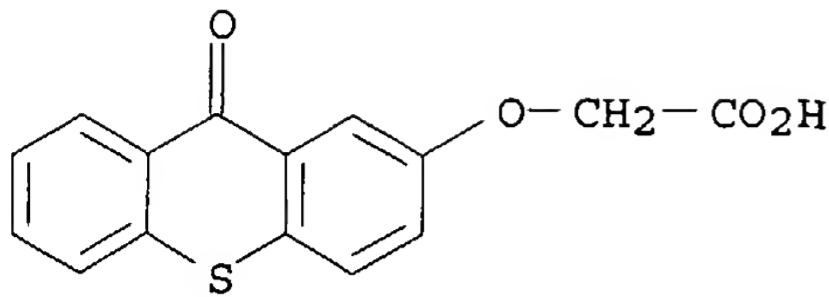
IT 84434-05-9P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; preparation of multifunctional thioxanthone photoinitiators with low migration for printing inks)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:566984 HCPLUS

DOCUMENT NUMBER: 125:196681

TITLE: Polymerizable photoinitiators

INVENTOR(S): Czech, Zbigniew

PATENT ASSIGNEE(S): Lohmann GmbH und Co Kg, Germany

SOURCE: Ger. Offen., 12 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19501025	A1	19960718	DE 1995-19501025	19950114
DE 19501025	C2	19961031		

PRIORITY APPLN. INFO.: DE 1995-19501025 19950114

OTHER SOURCE(S): MARPAT 125:196681

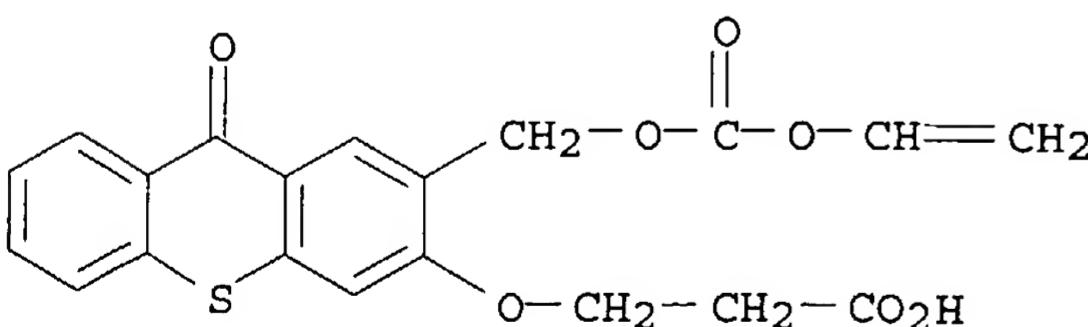
AB The compds. CH₂:CHOCOZR (R = chromophoric group, Z = O or NH) are polymerizable photoinitiators useful in the preparation of radiocurable polymers with good cohesion and heat resistance (no data). Adding 107 g vinyl chloroformate over 2 h to 197 g 4-hydroxybenzophenone and 50 g Et₃N stirred in CH₂Cl₂ at 20-30° gave 82% 4-benzoylphenyl vinyl carbonate.

IT 180977-75-7P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(polymerizable photoinitiators)

RN 180977-75-7 HCPLUS

CN Propanoic acid, 3-[2-[[[(ethoxyloxy)carbonyl]oxy]methyl]-9-oxo-9H-thioxanthen-3-yl]oxy] - (9CI) (CA INDEX NAME)

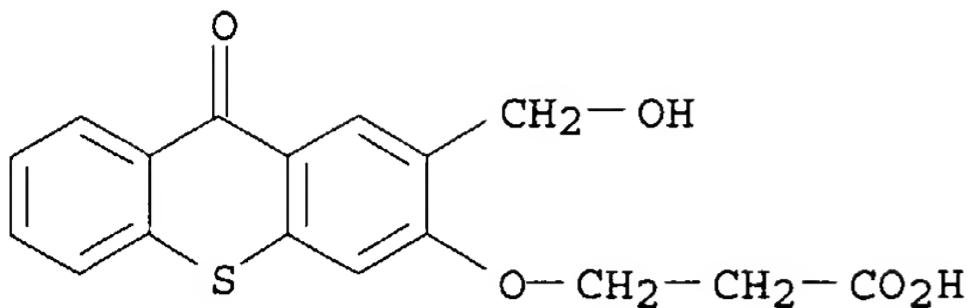


IT 180977-76-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with vinyl chloroformate)

RN 180977-76-8 HCPLUS

CN Propanoic acid, 3-[2-(hydroxymethyl)-9-oxo-9H-thioxanthen-3-yl]oxy] - (9CI) (CA INDEX NAME)



L8 ANSWER 8 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:894439 HCPLUS

DOCUMENT NUMBER: 124:56793

TITLE: Functionalized Polysiloxanes with Thioxanthone Side Groups: A Study of Their Reactivity as Radical Polymerization Macroinitiators

AUTHOR(S): Pouliquen, Lydie; Coqueret, Xavier; Morlet-Savary, Fabrice; Fouassier, Jean-Pierre

CORPORATE SOURCE: Laboratoire de Chimie Macromoleculaire, Universite des Sciences et Technologies de Lille, Villeneuve d'Ascq, F-59655, Fr.

SOURCE: Macromolecules (1995), 28(24), 8028-34

CODEN: MAMOBX; ISSN: 0024-9297

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Functionalized silicone copolymers containing thioxanthone side groups were prepared and evaluated as radical polymerization photoinitiators in the presence of 4-(dimethylamino)benzoate ester derivs. as coinitiators and acrylic esters as monomers. Compared to low-mol.-weight thioxanthone analogs, the functionalized siloxanes exhibit a polymer effect similar to that observed with siloxanes containing benzophenone side groups: the photoinitiating efficiency is enhanced when thioxanthone chromophores are present as pendent groups on polymer chains and when the tertiary amine is a free reactant in the medium. This effect disappears when the chromophores and the amino groups are attached to the same chains. Time-resolved spectroscopy was used to compare the quenching of thioxanthone triplets in several systems where the ketone and the amine reactants are present in the form of pendent groups in copolymers or as low-mol.-weight reactants. The photophys. study performed in media different in their nature and viscosity indicates that the polymer effect is not to be found in the efficiency of the primary deactivation process.

IT 172338-39-5P 172338-40-8P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(functionalized polysiloxanes with thioxanthone side groups and their reactivity as radical polymerization macroinitiators)

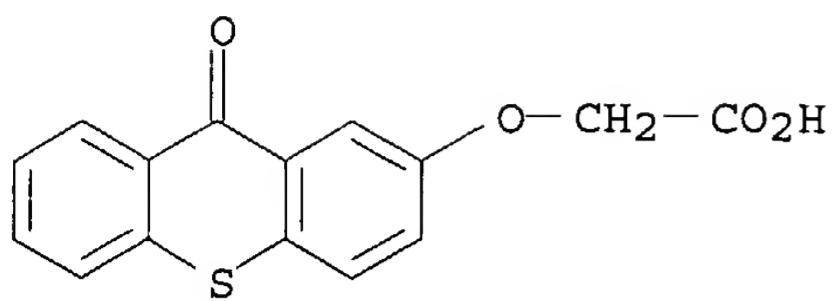
RN 172338-39-5 HCPLUS

CN Silanediol, dimethyl-, polymer with methyl[3-(oxiranylmethoxy)propyl]silanediol, acetate [(9-oxo-9H-thioxanthen-2-yl)oxy]acetate (9CI) (CA INDEX NAME)

CM 1

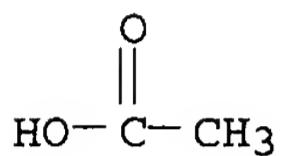
CRN 84434-05-9

CMF C15 H10 O4 S



CM 2

CRN 64-19-7
CMF C2 H4 O2

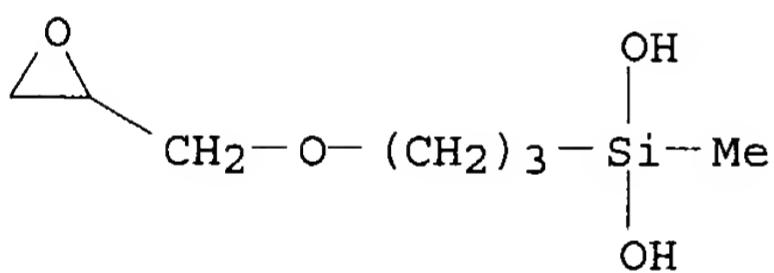


CM 3

CRN 156623-20-0
CMF (C7 H16 O4 Si . C2 H8 O2 Si)x
CCI PMS

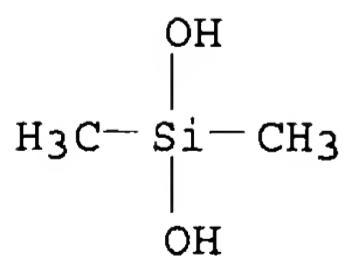
CM 4

CRN 133316-68-4
CMF C7 H16 O4 Si



CM 5

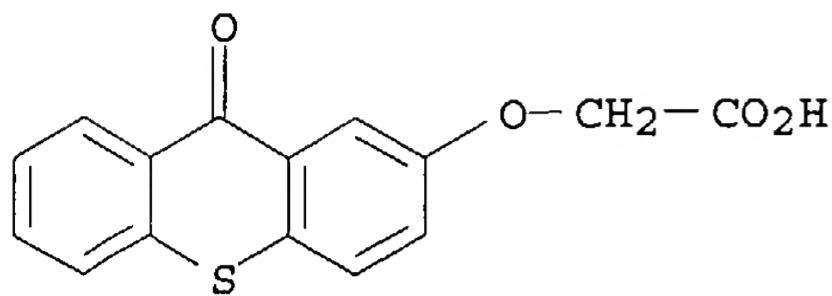
CRN 1066-42-8
CMF C2 H8 O2 Si



RN 172338-40-8 HCPLUS
CN Silanediol, dimethyl-, polymer with methyl[3-(oxiranylmethoxy)propyl]silanediol, acetate 4-(diethylamino)benzoate [(9-oxo-9H-thioxanthen-2-yl)oxy]acetate (9CI) (CA INDEX NAME)

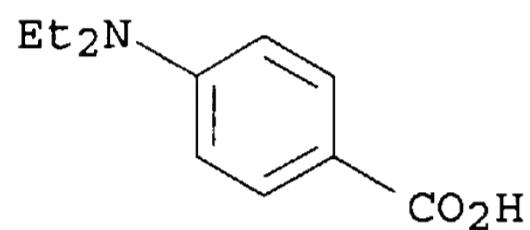
CM 1

CRN 84434-05-9
CMF C15 H10 O4 S



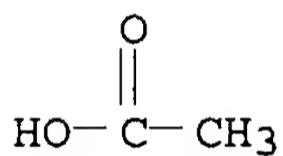
CM 2

CRN 5429-28-7
CMF C11 H15 N O2



CM 3

CRN 64-19-7
CMF C2 H4 O2

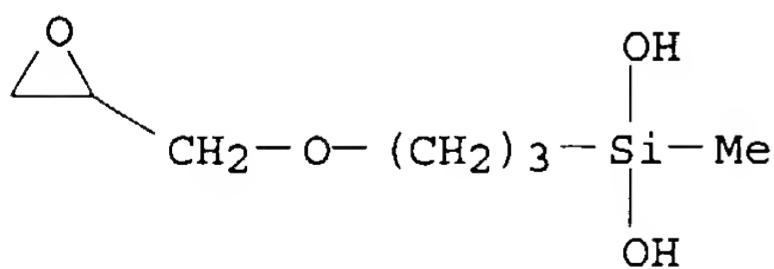


CM 4

CRN 156623-20-0
CMF (C₇ H₁₆ O₄ Si . C₂ H₈ O₂ Si)_x
CCI PMS

CM 5

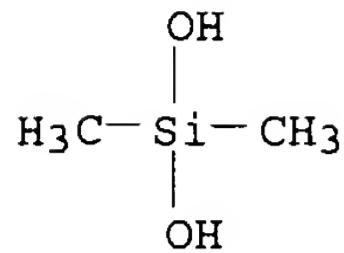
CRN 133316-68-4
CMF C₇ H₁₆ O₄ Si



CM 6

CRN 1066-42-8

CMF C2 H8 O2 Si

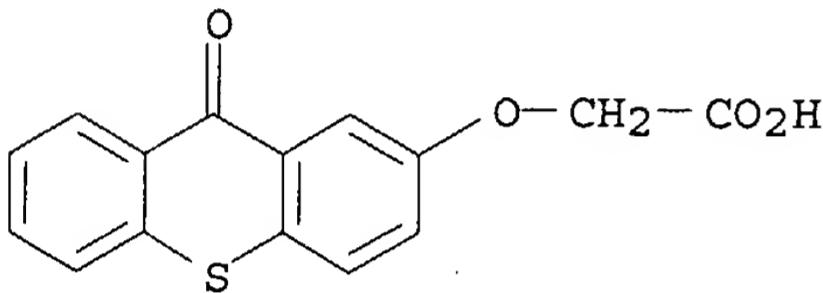


IT 84434-05-9

RL: RCT (Reactant); RACT (Reactant or reagent)
 (starting material; functionalized polysiloxanes with thioxanthone side groups and their reactivity as radical polymerization macroinitiators)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



L8 ANSWER 9 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:293235 HCPLUS

DOCUMENT NUMBER: 122:106722

TITLE: Functional polysiloxanes as photoinitiators for UV-curable compositions: evidence for a polymer effect

AUTHOR(S): Coqueret, Xavier; Pouliquen, Lydie

CORPORATE SOURCE: Lab. Chim. Macromoleculaire, Univ. Sci. Technologies Lille, Villeneuve d'Ascq, F-59655, Fr.

SOURCE: Macromolecular Symposia (1994), 87(Polymers: Progress in Chemistry and Physics), 17-24

CODEN: MSYMEC; ISSN: 1022-1360

PUBLISHER: Huethig & Wepf

DOCUMENT TYPE: Journal

LANGUAGE: English

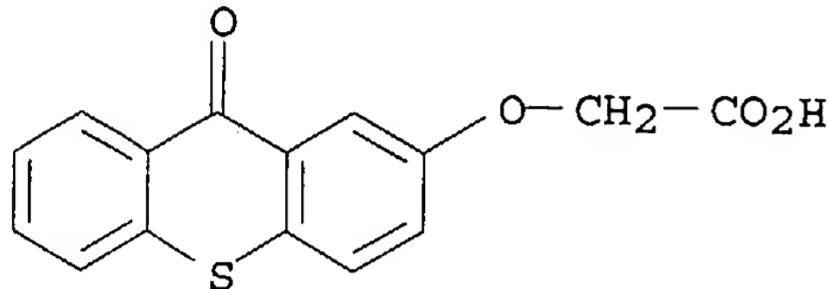
AB Functional silicone copolymers containing one or several types of pendant ester groups including a benzophenone or a thioxanthane chromophore, and/or a tertiary amine were used to prepare novel photo-initiating systems based on the phenone - amine photogeneration of radicals. The influence of the nature and relative amts. of the functional pendant units on the overall efficiency of the various initiating systems was evaluated by measuring the rate of polymerization of 2-ethylhexyl acrylate with 1,6-hexanediol diacrylate. The initiator containing a di-Me siloxane chain containing alkyl esters of 2-benzoylbenzoic, 2-thioxanthonyloxyacetic, and 4-dimethylaminobenzoic acid. By comparing the results obtained from different combinations of polymeric or low-mol.-weight reactants, a neat polymer effect inducing a greater initiation efficiency is evidenced, especially when a polysiloxane containing only aromatic carbonyl ester groups is associated with free 4-dimethylaminobenzoic esters as hydrogen donors. Time-resolved spectroscopy performed with thioxanthone functional systems indicates that the favorable effect on the apparent polymerization rate is not correlated with the rate of quenching of the triplet excited state by a tertiary amine. The polymer effect can rather be explained by the microheterogeneity of the distribution of the partners in the complex initiation process.

IT 84434-05-9D, 2-Thioxanthonyloxyacetic acid, reaction products with siloxanes

RL: CAT (Catalyst use); USES (Uses)
 (catalyst; polymer effect in functional polysiloxanes as
 photoinitiators for UV-curable polymer compns.)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



L8 ANSWER 10 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1989:58134 HCPLUS

DOCUMENT NUMBER: 110:58134

TITLE: Water-soluble polymerization initiators based on the thioxanthone structure: a spectroscopic and laser photolysis study

AUTHOR(S): Lougnot, D. J.; Turck, C.; Fouassier, J. P.

CORPORATE SOURCE: Lab. Photochim. Gen., Ec. Natl. Super. Chimie,
 Mulhouse, 68093, Fr.

SOURCE: Macromolecules (1989), 22(1), 108-16

CODEN: MAMOBX; ISSN: 0024-9297

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thioxanthones carrying ionic groups that induce water solubility and having fluorescence that can be quenched by amines are efficient photopolymer catalysts. Maximum efficiency is achieved by mono-substitution in the 3-position, regardless of the nature of the solubilizing group. The introduction of Me groups at other ring positions has a favorable effect on initiation efficiency. Kinetics of photopolymer. of acrylamide in the presence of 15 various thioxanthones is given.

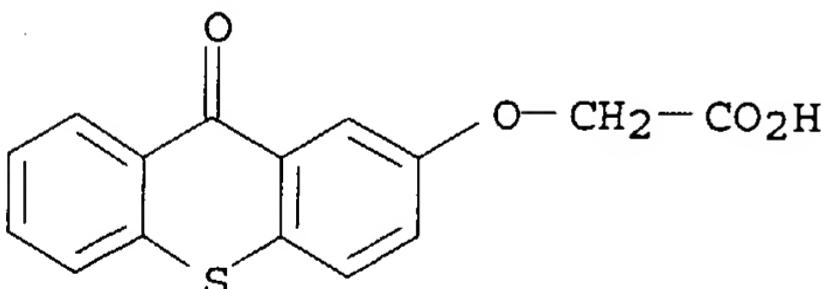
IT 84434-05-9

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for photopolymer. of acrylamide, kinetics in relation to)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



L8 ANSWER 11 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1988:550078 HCPLUS

DOCUMENT NUMBER: 109:150078

TITLE: Reactivity of water-soluble photoinitiators

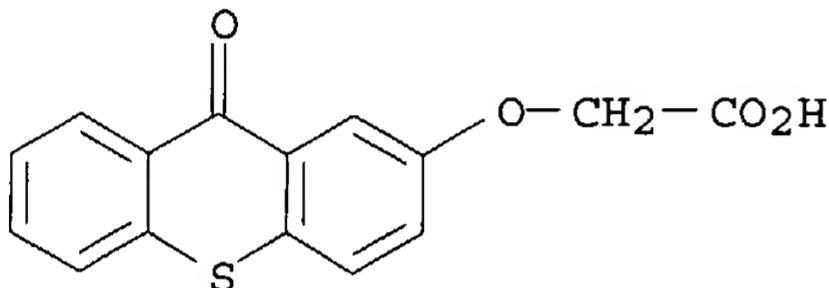
AUTHOR(S): Fouassier, J. P.; Lougnot, D. J.

CORPORATE SOURCE: Lab. Photochim. Gen., Mulhouse, Fr.

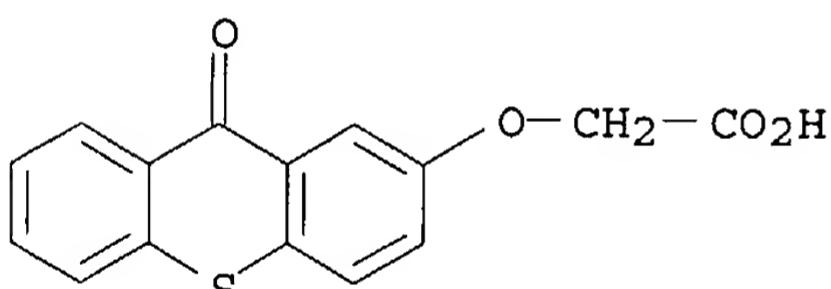
SOURCE: RADCURE '86 [Eighty Six], Conf. Proc., 10th (1986),
 4/1-4/11. Assoc. Finish. Processes SME: Dearborn,
 Mich.

CODEN: 56HLA5

DOCUMENT TYPE: Conference
 LANGUAGE: English
 AB Photochem. polymerization rates were determined for acrylamide in water in the presence of initiators derived from benzophenone, thioxanthone and benzil. Initiation mechanisms and comparative reactivities of the water-soluble photoinitiators are discussed.
 IT 84434-05-9 116942-51-9
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, water-soluble, for photochem. polymerization of acrylamides,
 reactivity of)
 RN 84434-05-9 HCPLUS
 CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



RN 116942-51-9 HCPLUS
 CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] -, compd. with
 2-(dimethylamino)ethanol (1:1) (9CI) (CA INDEX NAME)
 CM 1
 CRN 84434-05-9
 CMF C15 H10 O4 S



CM 2
 CRN 108-01-0
 CMF C4 H11 N O

Me₂N-CH₂-CH₂-OH

L8 ANSWER 12 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1988:493672 HCPLUS
 DOCUMENT NUMBER: 109:93672
 TITLE: Time-resolved laser spectroscopy of water-soluble photoinitiators
 AUTHOR(S): Fouassier, J. P.
 CORPORATE SOURCE: Ec. Natl. Super. Chim., Mulhouse, 68093, Fr.
 SOURCE: Fatipec Congress (1987), 18th(Vol. 3), 505-19
 CODEN: FAPVAP; ISSN: 0430-2222
 DOCUMENT TYPE: Journal
 LANGUAGE: French

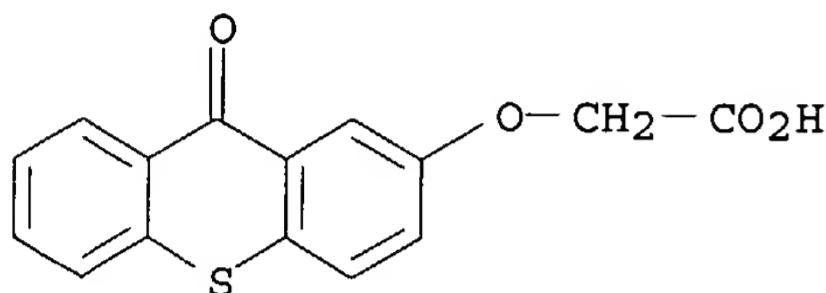
AB The primary processes involved in the excited states of water-soluble polymerization photoinitiators based on benzophenone, thioxanthone, and benzil were discussed. Kinetics of polymerization of Bu acrylate and Me methacrylate in aqueous solution in the presence of amines and solvents were determined

IT 84434-05-9

RL: CAT (Catalyst use); USES (Uses)
(catalysts, for acrylic photopolymn., primary processes in excited states of, reactivity in relation to)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



L8 ANSWER 13 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1987:554789 HCPLUS

DOCUMENT NUMBER: 107:154789

TITLE: Thioxanthone derivatives as photoinitiators in micelle photopolymerization

AUTHOR(S): Fouassier, Jean Pierre; Lougnot, Daniel Joseph

CORPORATE SOURCE: Lab. Photochim. Gen., Ec. Natl. Super. Chim.,
Mulhouse, 68093, Fr.

SOURCE: Journal of Applied Polymer Science (1987), 34(2),
477-88

CODEN: JAPNAB; ISSN: 0021-8995

DOCUMENT TYPE: Journal

LANGUAGE: English

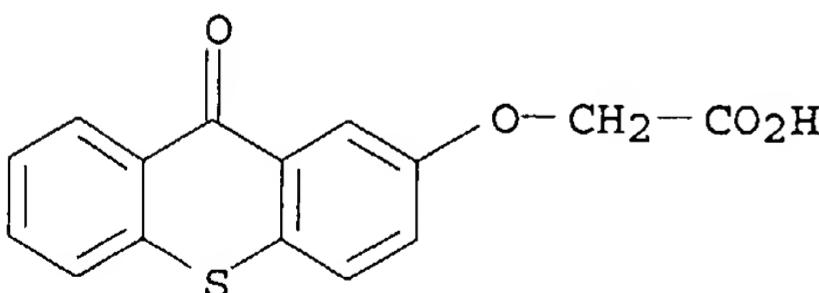
AB A complete survey of the primary processes involved during initiation of Me methacrylate polymerization in the presence of typical oil- and water-soluble thioxanthone derivs. dissolved in Na dodecyl sulfate micelles and amines was presented with special emphasis on the determination of the rate consts. of the different processes and absorption spectra of the transients. Relevant data were shown and discussed with reference to the effectiveness of these mols. as photopolymn. initiators.

IT 84434-05-9

RL: CAT (Catalyst use); USES (Uses)
(catalysts, for micelle photochem. polymerization of Me methacrylate)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



L8 ANSWER 14 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1986:554697 HCPLUS

DOCUMENT NUMBER: 105:154697

TITLE: Application of photoacoustic spectroscopy to UV-curable systems

AUTHOR(S): Salim, M. S.; Cundall, R. B.; Davies, A. K.; Dandikar, Y. M.; Slifkin, M. A.

CORPORATE SOURCE: Crown Decor. Prod. Ltd., Darwen/Lancs., UK

SOURCE: Polymers Paint Colour Journal (1986), 176(4171), 530, 532-4

DOCUMENT TYPE: CODEN: PPCJA3; ISSN: 0370-1158

LANGUAGE: English

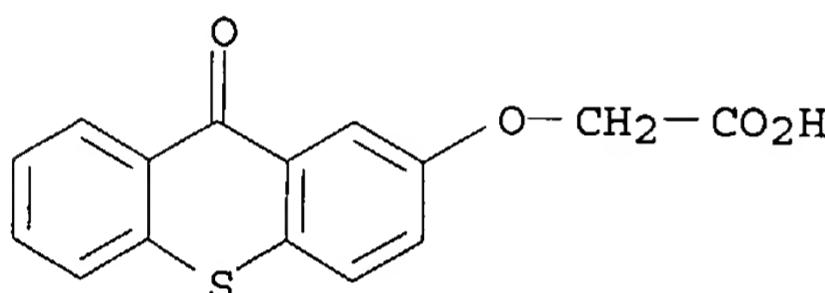
AB Photoacoustic spectroscopy was used to study the photopolymerization of thin acrylate films. The extent of cure of the films was measured. The degree of through-cure of both TiO₂-pigmented and unpigmented films, following different periods of irradiation using both median pressure Hg lamps and doped lamps was determined. The amount of residual photoinitiator in polymerized films and the degradation of the films were studied.

IT 84434-05-9

RL: CAT (Catalyst use); USES (Uses)
(crosslinking catalysts, for acrylate coatings, photoacoustic spectroscopy in relation to)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthan-2-yl)oxy] - (9CI) (CA INDEX NAME)



L8 ANSWER 15 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1985:46288 HCPLUS

DOCUMENT NUMBER: 102:46288

TITLE: Lasers, photoinitiators and monomers: a fashionable formulation

AUTHOR(S): Fouassier, J. P.; Jacques, P.; Lougnot, D. J.; Pilot, T.

CORPORATE SOURCE: Lab. Photochim. Gen., Ec. Natl. Super. Chim., Mulhouse, 68093, Fr.

SOURCE: Polymer Photochemistry (1984), 5(1-6), 57-76
CODEN: POPHDO; ISSN: 0144-2880

DOCUMENT TYPE: Journal

LANGUAGE: English

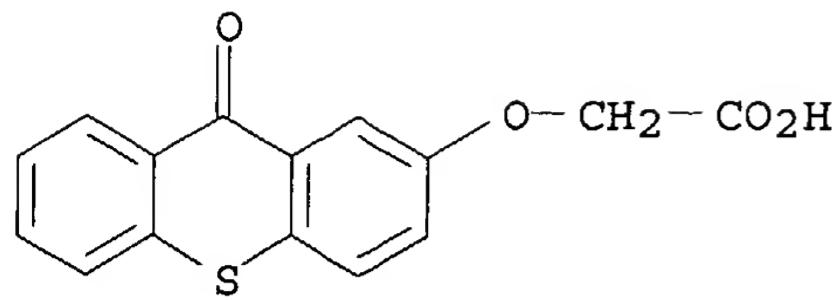
AB Monomers, photoinitiators and other additives for laser-induced photopolymer systems are discussed with emphasis on the specific role of the different elements of the composition, especially the initiator and the monomer. Typical examples of the behavior of the excited states (investigated through laser spectroscopy) are reported. They lead to a better insight into the photophys. and photochem. processes involved and allow a general discussion of the initiation reaction efficiency according to the monomer-initiator pair used. The results of several polymerization expts. obtained under various conditions of IR-radiation (conventional sources, pulsed or continuous lasers) are compared.

IT 84434-05-9

RL: CAT (Catalyst use); USES (Uses)
(catalysts, for laser-induced photopolymer systems)

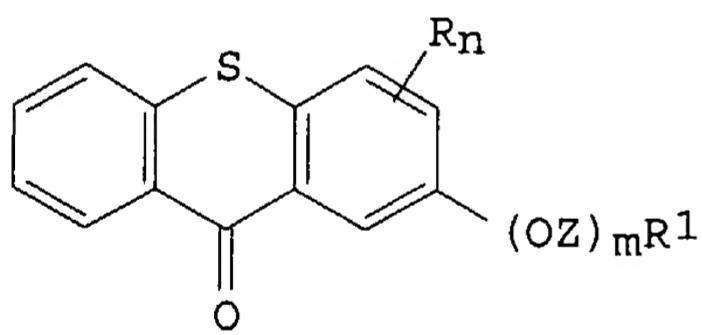
RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthan-2-yl)oxy] - (9CI) (CA INDEX NAME)



L8 ANSWER 16 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN
 ACCESSION NUMBER: 1984:129930 HCPLUS
 DOCUMENT NUMBER: 100:129930
 TITLE: Water-base photosensitive resin compositions
 PATENT ASSIGNEE(S): Sericol Group Ltd., UK
 SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 58080301	A2	19830514	JP 1982-164787	19820921
JP 02008604	B4	19900226		
US 4418138	A	19831129	US 1982-411565	19820825
CA 1210547	A1	19860826	CA 1982-410327	19820827
AU 8287832	A1	19830512	AU 1982-87832	19820830
AU 553151	B2	19860703		
EP 81280	A1	19830615	EP 1982-304898	19820916
EP 81280	B1	19851211		
R: BE, CH, DE, FR, IT, LI, NL				
PRIORITY APPLN. INFO.: GI			GB 1981-33114	A 19811103



I

AB Water-base photosensitive resin compns. contain (1) ≥1 water-sol (miscible or dispersible) monomer having ethylenic end groups, (2) ≥1 tert-amine type photopolymn. promoting compound having ethylenic end groups, (3) aqueous colloids, and (4) a photopolymn. initiator of the formula I (R = halo, alkyl, alkoxy, alkylthio, NO₂, NH₂, alkylamino, dialkylamino, alkanoylamino, benzoylamino, N-alkanoyl-N-benzoylamino, sulfonamido, acetyl; Z = C₁₋₄ alkylene; R₁ = CO₂H, SO₃H, OSO₃H, O₂CZ₁CO₂H; Z₁ = C≤8 di- or tricarboxylic acid moiety; n = 0, 1, 2; m = 1, 2). The photosensitive resin compns. are especially useful for screen printing plate preparation. Thus, Catofor 06 (a cationic surfactant having ternary amino group and ethylene oxide groups; from ABM Chemical), poly(vinyl alc.), dimethylaminoethyl acrylate, polyethylene glycol diacrylate, trimethylolpropane triacrylate, Vinamul 8440 [a poly(vinyl acetate) emulsion, from Vinyl Products Ltd.], 2-(carboxymethoxy)thioxanthone, Anthrasol Pink IR and polyethylene glycol were mixed and coated on a film

support to give a photosensitive film. The photosensitive layer showed good photopolymer characteristics.

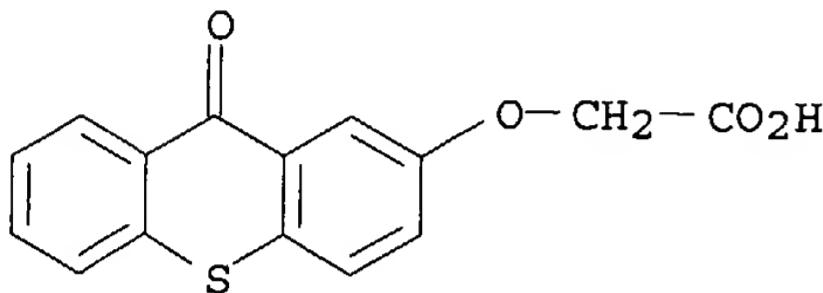
IT 84434-05-9

RL: USES (Uses)

(photopolymer initiator, for water-base photosensitive resin compns.)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthene-2-yl)oxy]- (9CI) (CA INDEX NAME)



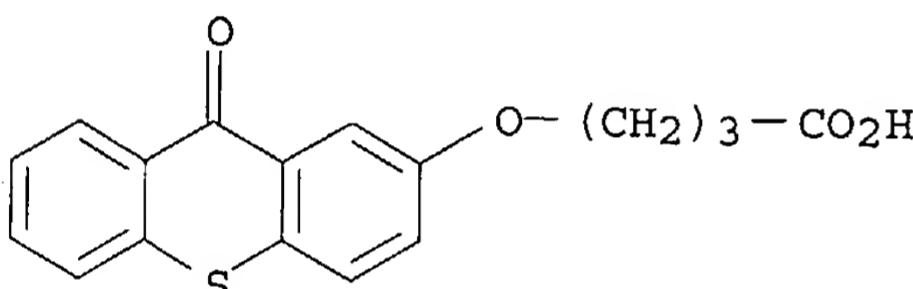
IT 86841-01-2P

RL: PREP (Preparation)

(photopolymer initiator, preparation of)

RN 86841-01-2 HCPLUS

CN Butanoic acid, 4-[(9-oxo-9H-thioxanthene-2-yl)oxy]- (9CI) (CA INDEX NAME)



L8 ANSWER 17 OF 17 HCPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1983:496864 HCPLUS

DOCUMENT NUMBER: 99:96864

TITLE: Photopolymerizable materials for use in producing stencils for screen printing

INVENTOR(S): Curtis, John Robert

PATENT ASSIGNEE(S): Sericol Group Ltd., UK

SOURCE: Brit. UK Pat. Appl., 9 pp.

CODEN: BAXXDU

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
GB 2108979	A1	19830525	GB 1982-26358	19820916
GB 2108979	B2	19850731		
US 4418138	A	19831129	US 1982-411565	19820825
CA 1210547	A1	19860826	CA 1982-410327	19820827
AU 8287832	A1	19830512	AU 1982-87832	19820830
AU 553151	B2	19860703		
EP 81280	A1	19830615	EP 1982-304898	19820916
EP 81280	B1	19851211		

R: BE, CH, DE, FR, IT, LI, NL

PRIORITY APPLN. INFO.: GB 1981-33114 A 19811103

AB Photopolymerizable composition useful for preparation of the printing screens comprises ≥1 terminally ethylenically unsatd. monomer, ≥1 tertiary-N containing monomer as an accelerator, a H₂O-soluble colloid, and a

H₂O-soluble photoinitiator being a carboxyalkoxy- or sulfoalkoxythioxanthone derivative Thus, a polyester screen mesh was coated with a composition containing
13%

aqueous GH20 50, methylenebisacrylamide 0.5, acrylamide 3, polyethylene glycol 200 diacrylate 2, triethanolamine 1, 3,4-dimethyl-2-(3-sulfopropoxy)thioxanthone 0.1, Vinnapas EP 14 10.5, 50% Irgalite Blue CPV2 0.4 weight part, imagewise exposed to 800W Hg lamp at a distance of 1m for 10s, and washed with H₂O to give a good stencil image.

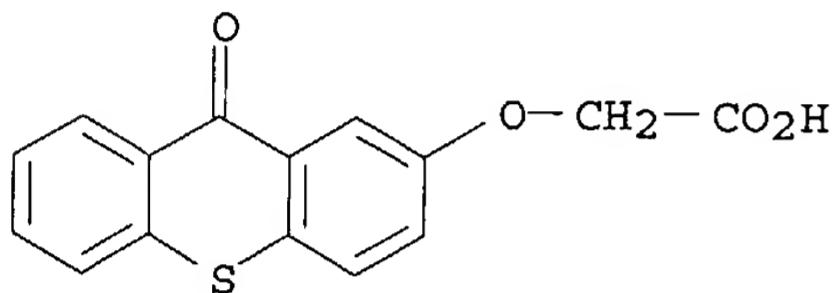
IT **84434-05-9**

RL: USES (Uses)

(photopolymerizable composition for preparation of printing screens containing)

RN 84434-05-9 HCPLUS

CN Acetic acid, [(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



IT **86841-01-2P**

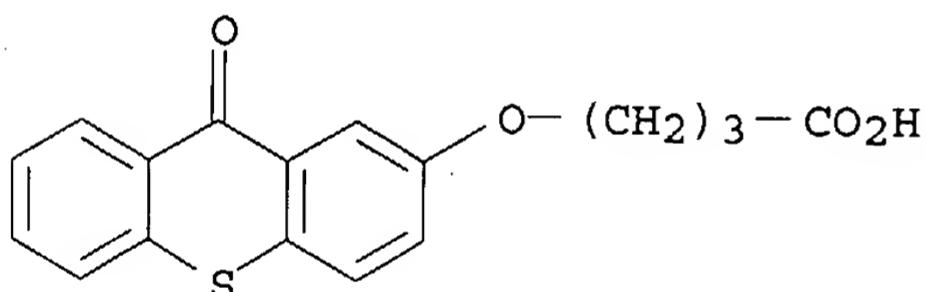
RL: PREP (Preparation)

(preparation of, as photoinitiator for photopolymerizable composition for preparation

of printing screens)

RN 86841-01-2 HCPLUS

CN Butanoic acid, 4-[(9-oxo-9H-thioxanthen-2-yl)oxy] - (9CI) (CA INDEX NAME)



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